

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application:

1. (Currently amended) An apparatus for applying an additive material to a continuous advancing strip of a paper web within a cigarette making machine, the apparatus comprising:
 - a first roller adapted to receive the additive material from a reservoir on at least a portion of its roll face;
 - a second roller adjacent to the first roller adapted to receive the additive material to at least a portion of its roll face; and
 - a third roller in roll contact with the second roller and adapted to (a) receive the additive material to desired locations on its roll face from the roll face of the second roller and (b) apply that additive material to the continuous advancing strip of paper web; and
 - a fourth roller having a roll face (i) located in roll contact with the third roller and (ii) positioned such that the paper web passes between the roll faces of the third and fourth rollers where the additive material is applied to the paper web,
wherein the paper web is suitable for making a continuous smokable rod.
2. (Canceled)
3. (Original) The apparatus of claim 1, wherein the strip of a paper web has an inside major surface and an outside major surface, and the apparatus is adapted so as to apply the additive material to the inside major surface of the strip of a paper web.
4. (Canceled)
5. (Original) The apparatus of claim 1, wherein the third roller
 - (a) possesses dies protruding outwardly from its roll face, each die having a roll face,

(b) is adapted to receive the additive material from the roll face of the second roller on the roll faces of the dies,

(c) has the roll faces of the dies in roll contact with the second roller,

(d) has the roll faces of the dies in contact with the paper web, and

(e) is adapted to transfer the additive material from the roll faces of the dies to the paper web.

6. (Canceled)

7. (Original) The apparatus of claim 5, wherein the strip of a paper web has an inside major surface and an outside major surface, and the apparatus is adapted so as to apply the additive material to the inside major surface of the strip of a paper web.

8. (Original) The apparatus of claim 1, comprising

a reservoir for containing the additive material and supplying the additive material to at least a portion of the roll face of the second roller;

the third roller

(a) possessing dies protruding outwardly from its roll face, each die having a roll face,

(b) adapted to receive the additive material from the roll face of the second roller on the roll faces of the dies,

(c) having the roll faces of the dies in roll contact with the second roller,

(d) having the roll faces of the dies in contact with the paper web, and

(e) adapted to transfer the additive material from the roll faces of the dies to the paper web;

a means for contacting the roll faces of the dies of the third roller with the roll face of the second roller; and

a means for contacting the roll faces of the dies of the third roller with the paper web.

9. (Original) The apparatus of claim 8, wherein the dies are positioned a predetermined distance apart in a die pattern, and wherein when the roll faces of the dies contact the paper web, the additive material on each roll face is transferred to the paper web to form a pattern of a plurality of spaced-apart bands corresponding to the predetermined die pattern.

10. (Currently amended) An apparatus for applying an additive material to a continuous advancing strip of a paper web within a cigarette making machine, the apparatus comprising:

a first roller adapted to receive the additive material from a reservoir on at least a portion of its roll face;

a second roller having a roll face and being in roll contact with the first roller;

a means for supplying the additive material to at least a portion of the roll face of the second roller;

a third roller having a roll face and being in roll contact with the second roller;

a means for transferring some of the additive material on the roll face of the second roller to the third roller at predetermined locations on the roll face of the third roller; and

a means for providing transfer of the additive material on the predetermined locations on the roll face of the third roller to desired regions of the paper web, comprising a fourth roller having a roll face (i) located in roll contact with the third roller and (ii) positioned such that the paper web passes between the roll faces of the third and fourth rollers where the additive material is applied to the paper web,

wherein the paper web is suitable for making a continuous smokable rod.

11. (Canceled)

12. (Original) The apparatus of claim 10, wherein the paper web has an inside major surface and an outside major surface, and the apparatus is adapted so as to apply the additive material to the inside major surface of the paper web.

13. (Canceled)

14. (Currently amended) An apparatus for manufacturing a continuous cigarette rod, the apparatus comprising:

a bobbin for supplying a continuous strip of a paper web suitable for making a continuous smokable rod;

a garniture region for forming a continuous smokable rod;

an apparatus for applying an additive material to the continuous strip of a paper web, the applicator apparatus

(a) being located between the bobbin and the garniture region such that the paper web supplied by the bobbin has the additive material applied thereto prior to entering the garniture region;

(b) having a first roller adapted to receive the additive material from a reservoir on at least a portion of its roll face,

(c) having a second roller adjacent to the first roller adapted to receive the additive material to at least a portion of its roll face, and

(d) having a third roller in roll contact with the second roller and adapted to (i) receive the additive material to desired locations on its roll face from the roll face of the second roller and (ii) apply that additive material to the continuous strip of a paper web, and

(e) having a fourth roller having a roll face (i) located in roll contact with the third roller and (ii) positioned such that the paper web passes between the roll faces of the third and fourth rollers where the additive material is applied to the paper web.

15. (Canceled)

16. (Original) The apparatus of claim 14, wherein the paper web has an inside major surface and an outside major surface, and the apparatus is adapted so as to apply the additive material to the inside major surface of the paper web.

17. (Original) The apparatus of claim 14, comprising a means for maintaining the first and second rollers in roll contact, and a means for maintaining the second and third rollers in roll contact.

18. (Original) The apparatus of claim 14, wherein the first roller possesses a roll face having a width and a peripheral circumference, the first roller further possessing a continuous groove in its roll face, the groove extending across a portion of the width of the roll face and completely circumscribing the peripheral circumference of the roll face.

19. (Currently amended) A method for applying an additive material to a continuous advancing strip of a paper web suitable for forming a continuous smokable rod within a cigarette making machine, the method comprising:

providing a first roller adapted to receive the additive material from a reservoir on at least a portion of its roll face;

providing a second roller adjacent to the first roller adapted to receive the additive material to at least a portion of its roll face from the first roller;

providing a third roller in roll contact with the second roller and adapted to

(a) receive the additive material to desired locations on its roll face from the roll face of the second roller and

(b) apply that additive material to the continuous advancing strip of paper web;

providing a fourth roller having a roll face (a) located in roll contact with the third roller and (b) positioned such that the paper web passes between the roll faces of the third and fourth rollers; and

operating the rollers such that additive material is supplied to a region on the roll face of the second roller, the additive material is transferred from the second roller in a predetermined manner, and the additive material is transferred from the roll face of the third roller to the continuous advancing strip of a paper web in a predetermined manner when the paper web passes between the third and fourth rollers; and

advancing the strip of a paper web to a garniture region in the cigarette making machine
for forming a continuous smokable rod.

20. (Currently amended) A method for applying an additive material to a continuous advancing strip of a paper web suitable for forming a continuous smokable rod within a cigarette making machine, the method comprising:

providing a first roller having a roll face;

providing a second roller having a roll face;

providing a third roller having a roll face;

providing a fourth roller having a roll face;

rotating the first, second, and third rollers;

supplying the additive material from a reservoir to the roll face of the first roller;

supplying the additive material to the roll face of the second roller through roll interaction of the first roller with the second roller;

supplying the additive material to predetermined locations on the roll face of the third roller through roll interaction of the second roller with the third roller;

continuously advancing the strip of a paper web so as to provide a moving strip of paper web between the roll faces of the third and fourth rollers; and

contacting the roll face of the third roller with the roll face of the fourth roller and with the moving strip of paper web so as to transfer ~~in~~ the additive material to the web in a predetermined pattern; and

advancing the strip of a paper web to a garniture region in the cigarette making machine
for forming a continuous smokable rod.

21. (Currently amended) A method for applying an additive material to a continuous advancing strip of a paper web suitable for forming a continuous smokable rod within a cigarette making machine, comprising the steps of:

supplying the continuous advancing strip of a paper web;

providing a first roller having a roll face;

providing a second roller having a roll face;

providing an additive reservoir adjacent to the first roller for containing the additive material;

supplying the additive material from the reservoir to the roll face of the first roller;

supplying the additive material to the roll face of the second roller through roll interaction of the first roller with the second roller;

providing a third roller

(a) having dies protruding from the third roller, each die having a roll face,

(b) adapted to receive the additive material from the roll face of the second roller on the roll faces of the dies,

(c) having the roll faces of the dies in roll contact with the second roller,

(d) having the roll faces of the dies in contact with the paper web, and

(e) adapted to transfer the additive material from the roll faces of the dies to the paper web;

transferring the additive material from the roll face of the second roller to the roll faces of the dies by contacting the roll faces of the dies of the third roller with the roll face of the second roller;

providing a fourth roller having a roll face (a) in roll contact with the roll faces of the dies and (b) positioned such that the paper web passes between the roll faces of the third and fourth rollers; and

transferring the additive material to the paper web by contacting the roll faces of the dies of the second third roller with the paper web when the paper web passes between the third and fourth rollers; and

advancing the strip of a paper web to a garniture region in the cigarette making machine for forming a continuous smokable rod.

22. (New) The apparatus of claim 1, wherein the strip of a paper web having the additive material applied thereto is wound on a bobbin for later use in the cigarette making machine.

23. (New) The apparatus of claim 22, further comprising a means for drying the additive material on the continuous strip of a paper web before the paper web is wound on the bobbin.
24. (New) The apparatus of claim 1, further comprising a separate drive means for each of the first, second, and third rollers for independent control of speeds of each of the first, second, and third rollers.
25. (New) The apparatus of claim 24, further comprising a programmable microprocessor for controlling the drive means for each of the first, second, and third rollers.
26. (New) The apparatus of claim 1, further comprising a means for adjusting at least each of the first, second, and third rollers to control a degree of touching of the first and second rollers, of the second and third rollers, and of the third and fourth rollers.
27. (New) The apparatus of claim 26, wherein the means for adjusting at least the first roller comprises a roller pressure plate operably connected to an air cylinder.
28. (New) The process of claim 19, further comprising winding the continuous strip of a paper web having the additive material applied thereto onto a bobbin for later use in the cigarette making machine.
29. (New) The process of claim 28, further comprising drying the additive material on the continuous strip of a paper web before the paper web is wound on the bobbin.
30. (New) The process of claim 19, further comprising independently controlling speeds of each of the first, second, and third rollers.
31. (New) The process of claim 19, further comprising controlling a degree of touching of the first and second rollers, of the second and third rollers, and of the third and fourth rollers.

32. (New) The process of claim 20, further comprising drying the additive material on the continuous strip of a paper web before the paper web is advanced to the garniture region.

33. (New) The process of claim 20, further comprising winding the continuous strip of a paper web having the additive material applied thereto onto a bobbin for later use in the cigarette making machine.

34. (New) The process of claim 33, further comprising drying the additive material on the continuous strip of a paper web before the paper web is wound on the bobbin.

35. (New) The process of claim 20, further comprising independently controlling speeds of each of the first, second, and third rollers.

36. (New) The process of claim 20, further comprising controlling a degree of touching of the first and second rollers, of the second and third rollers, and of the third and fourth rollers.